

*Managing Unplanned Ignitions
for
Resource Management Benefit
in
Klamath Mountains*

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Project Idea

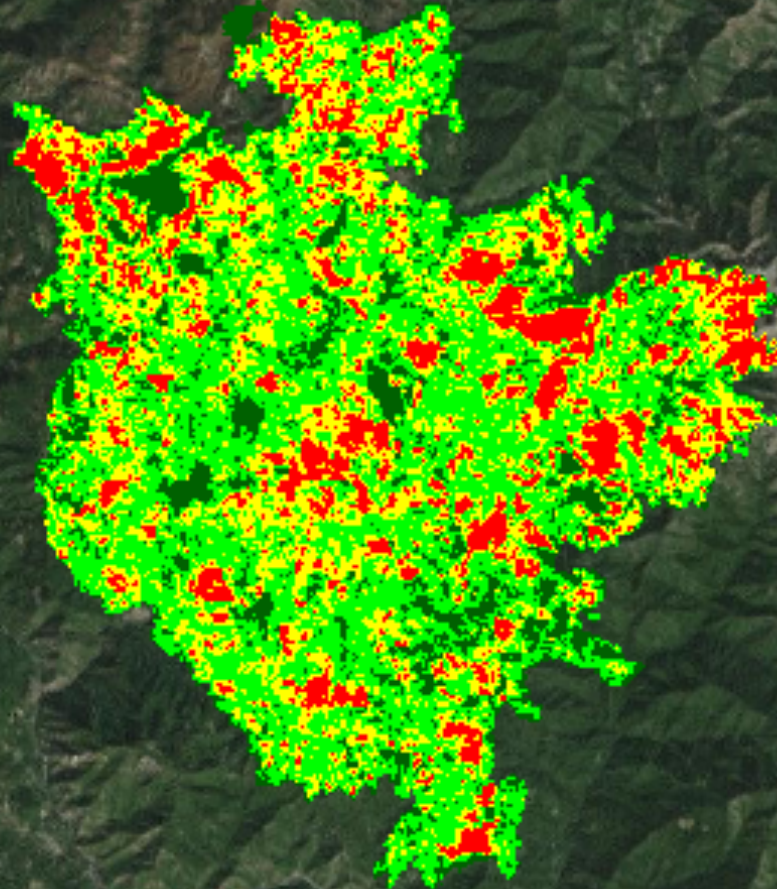
- Fire managers Shasta Trinity NF Looking for decision support on when to use unplanned ignitions
- Shasta Trinity goal to restore fire to its natural role on the landscape
- Asked us to take a look at the River Complex and assess the ecological effects of burning within the area

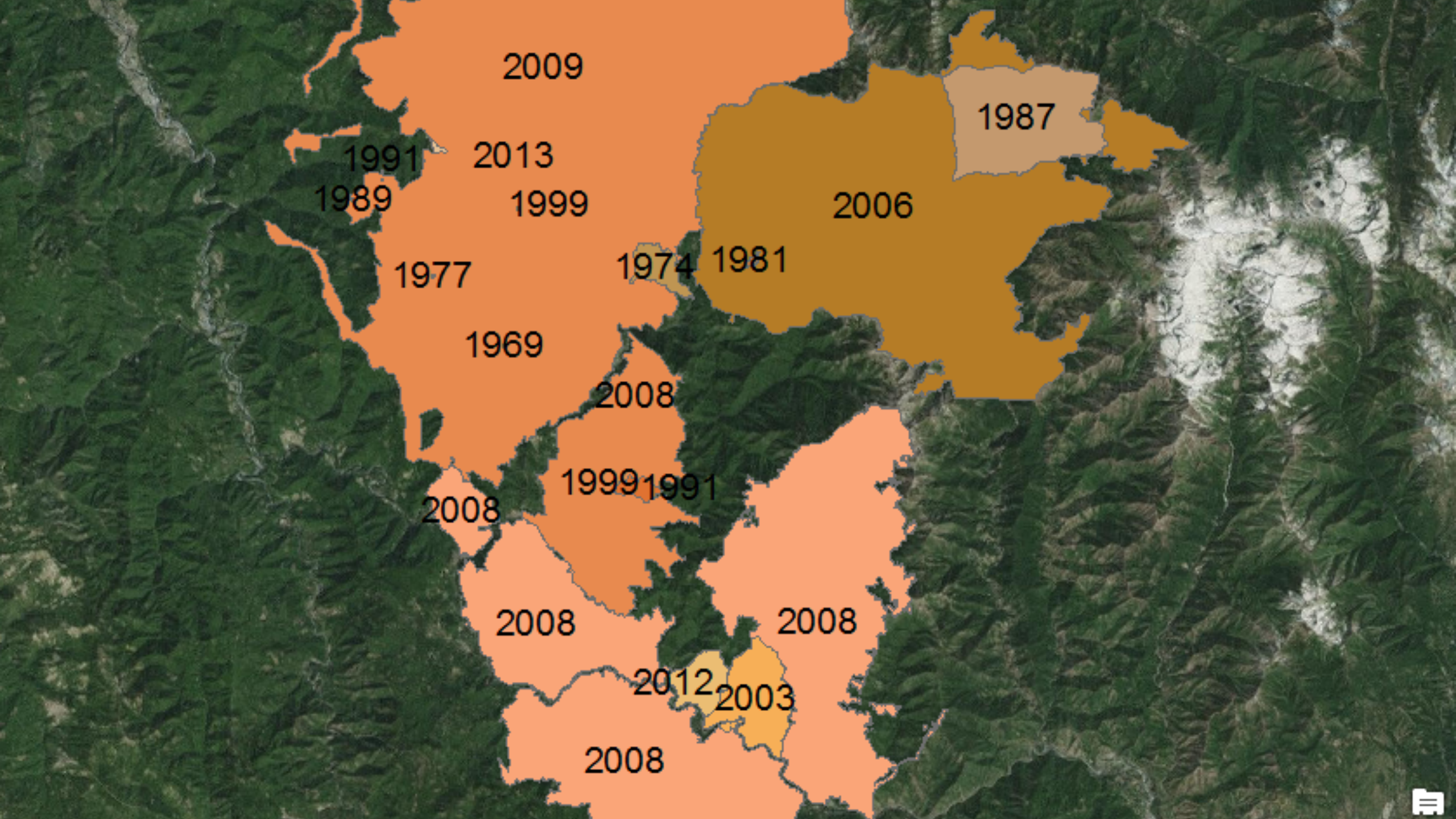
River Complex 2015

- July 30, 2015 dry lightning storm that caused 60 new fire starts
- By August 2nd multiple fires burned together into River complex
- Final fire size ~ 70,000 acres, ~ 62,000 managed as a resource management fire

RAVG

(Ravage Assessment of Vegetation after Wildfire)





2009

1987

1991
1989

2013

1999

2006

1977

1974 1981

1969

2008

2008

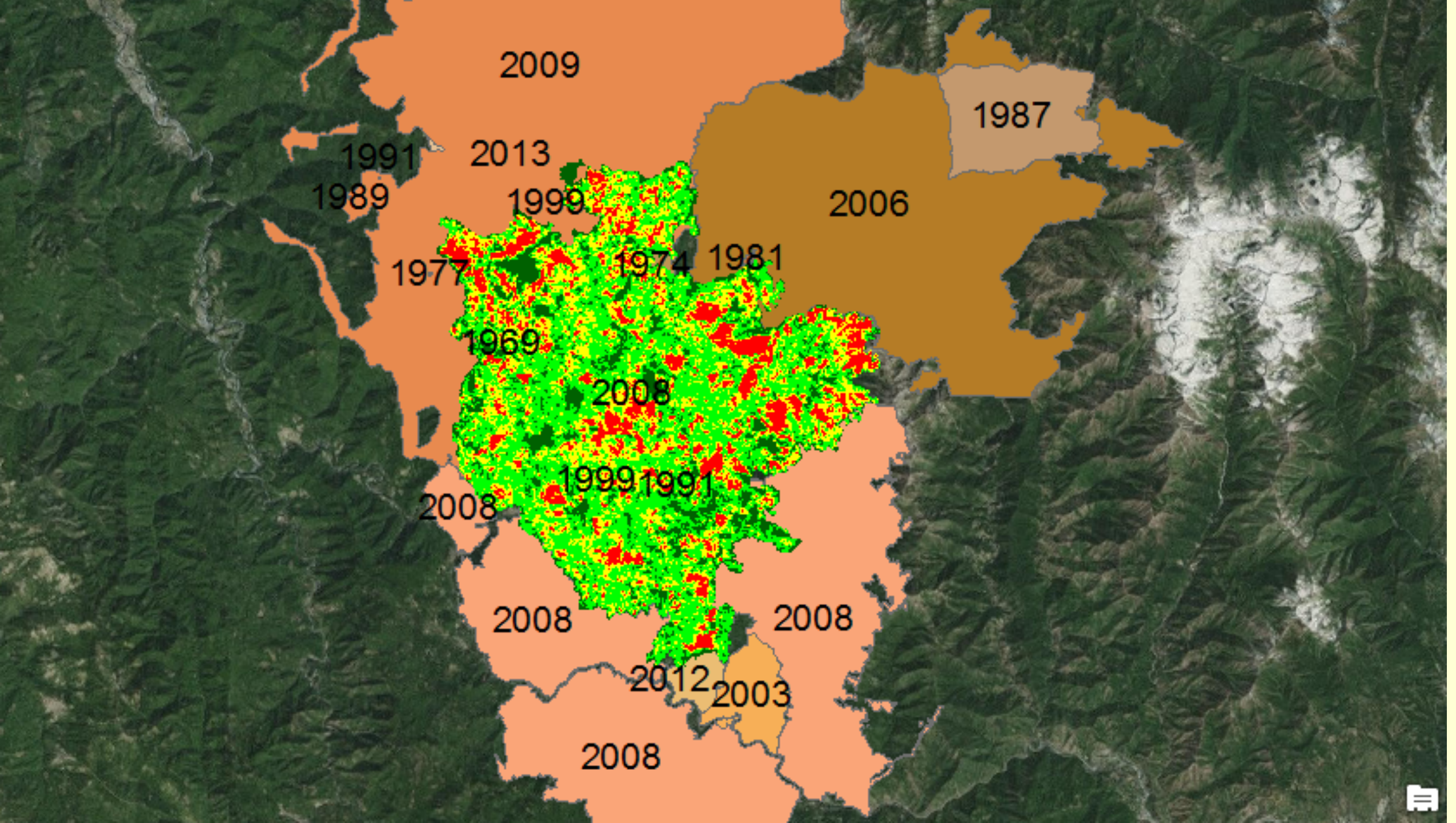
1999 1991

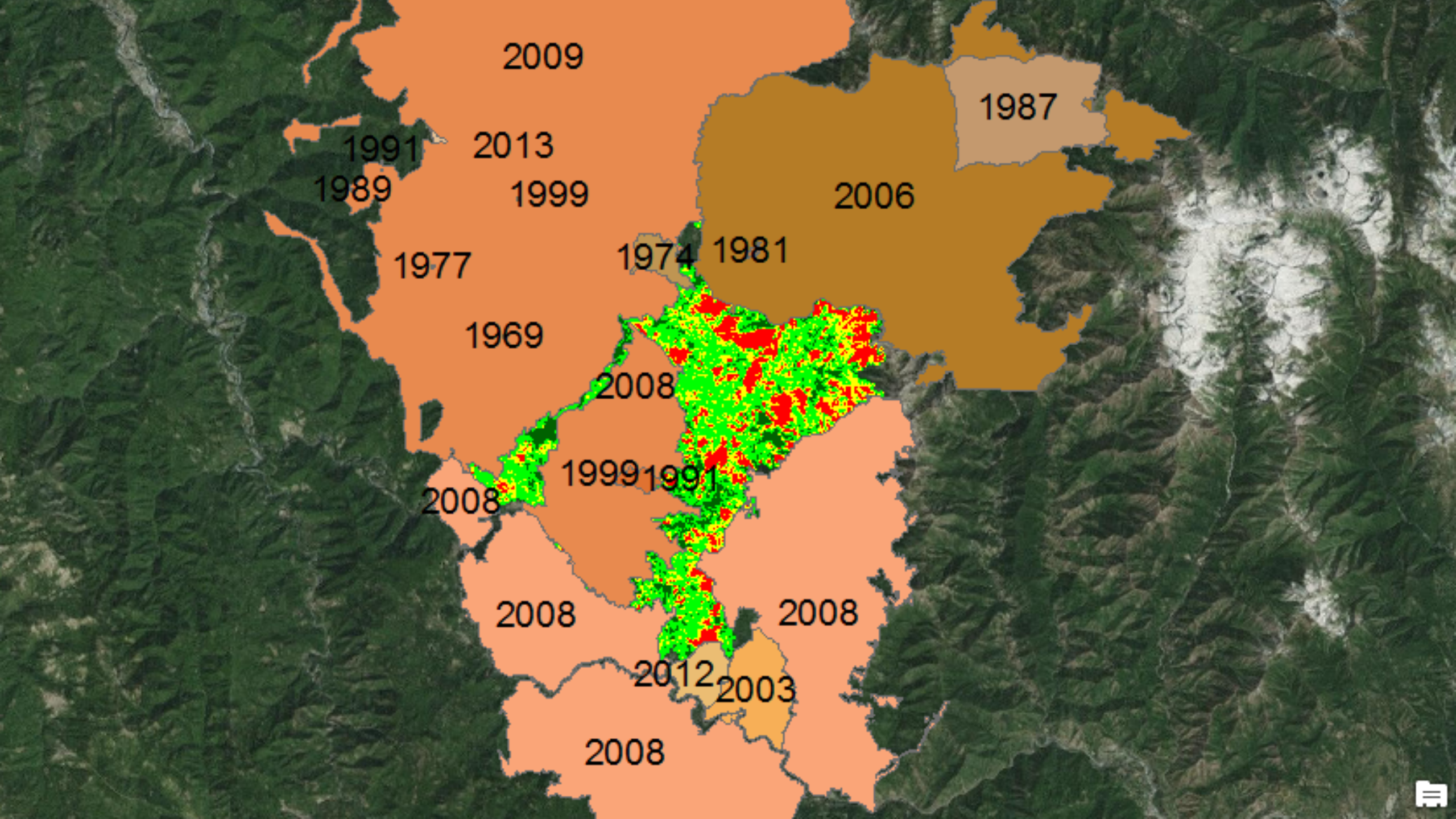
2008

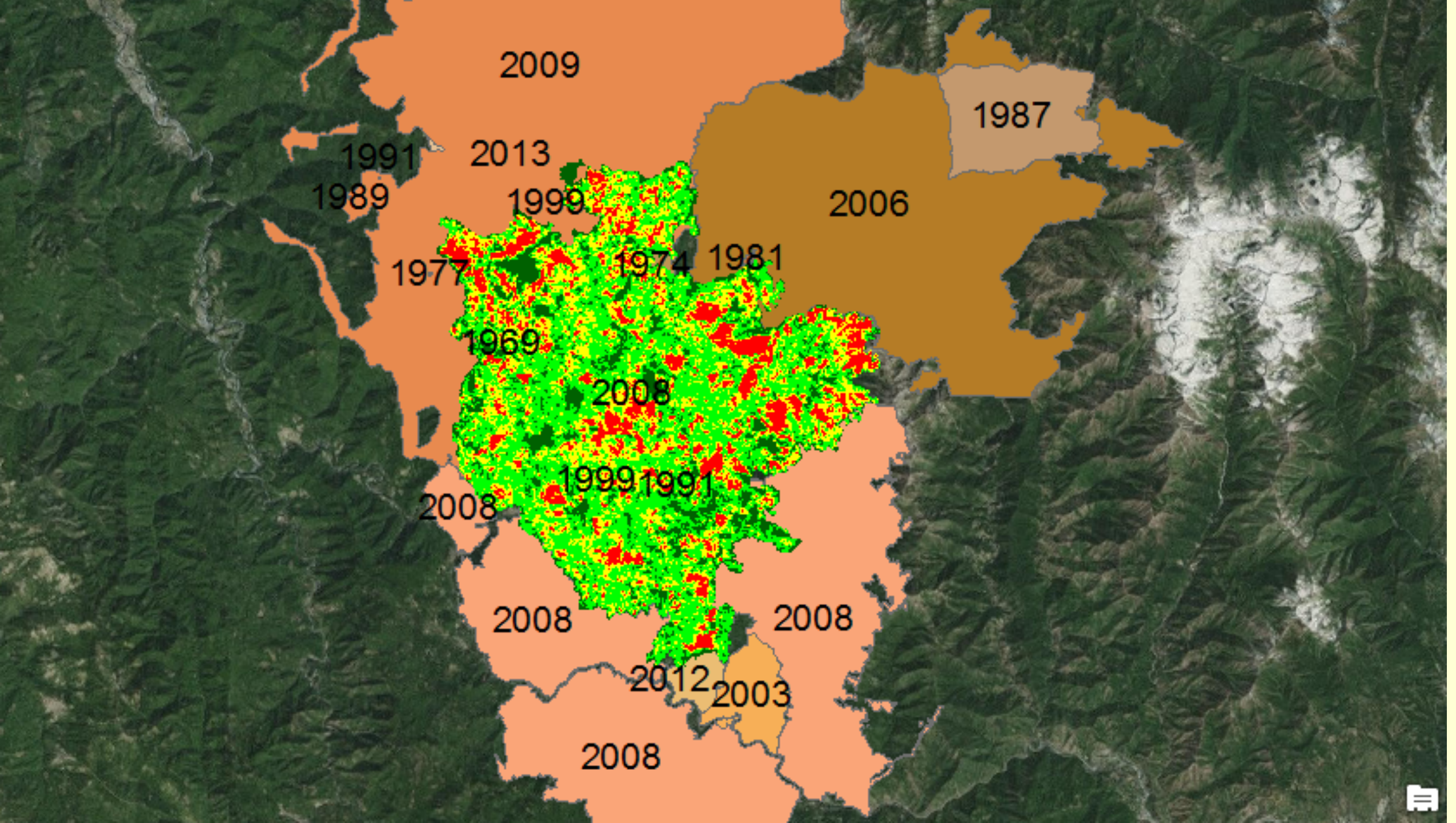
2008

2012 2003

2008







River Complex 2015



Currently uncertain under what conditions land managers can use unplanned ignitions to meet resource management needs

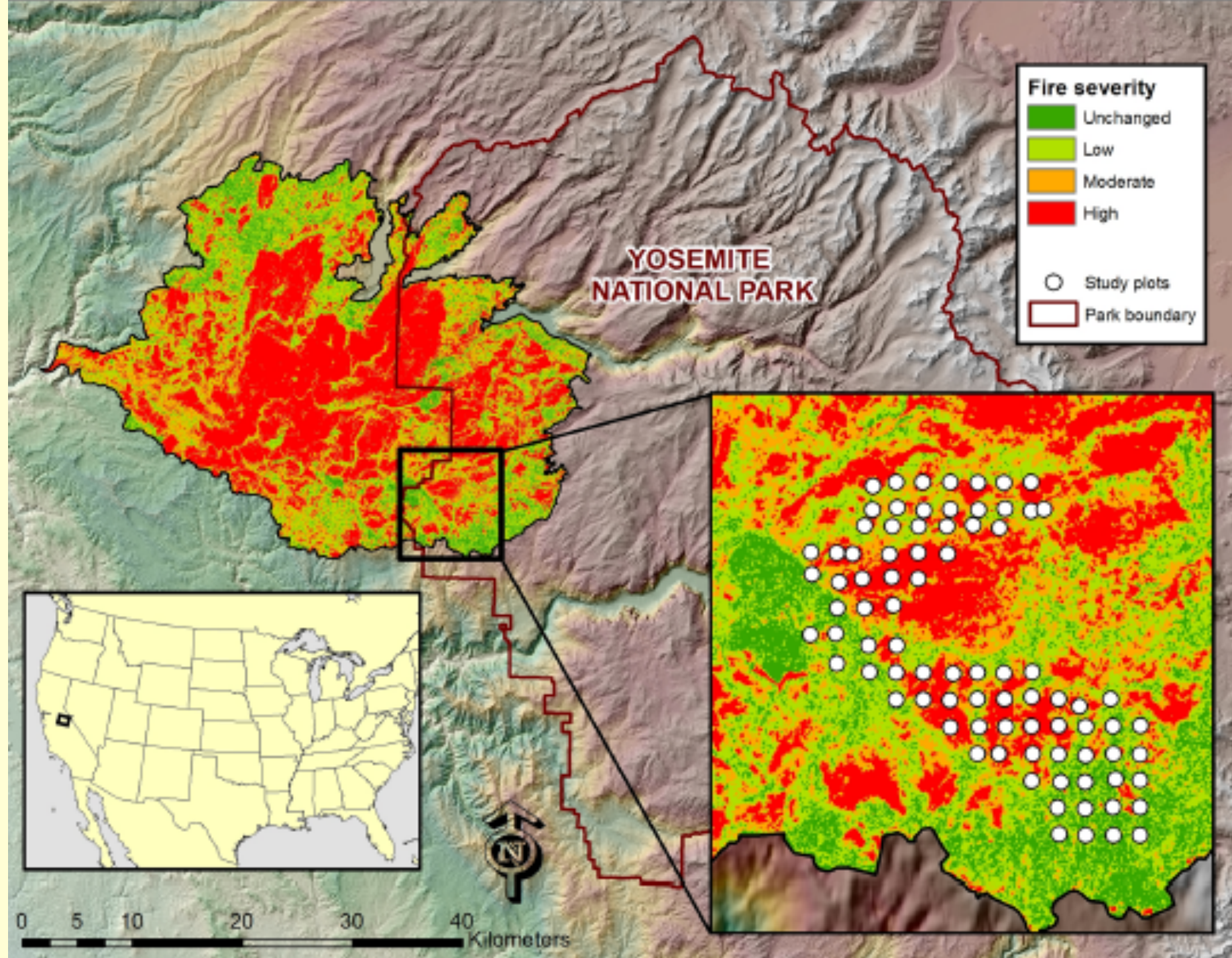
Questions:

- How long will a previous fire serve as a barrier to fire spread or decrease the fire intensity and subsequent fire severity of future burning?
- Under what climate and weather conditions can land managers successfully use unplanned ignitions to meet management goals?
- When should land managers in the Klamath Mountains expect unacceptable levels of high fire severity e.g. unwanted tree mortality?
- Are there drivers of fire severity that can be used to model fire severity in the Klamath Mountains?

Methods:

Use a combination of literature review, remote sensing, ArcGIS (QGIS?), and field plots to determine metrics useful for evaluating the potential to use unplanned ignitions.

- Install modified CBI plots across range of RAVG/MTBS burn severities
- Identify drivers of increased fire intensity and fire severity (such as vegetation type, fuel quantity, topography, previous fire severity)
- Model fire severity using Random Forest and sequential autoregression (SAR) modeling



Products

- Decision support guidelines for using unplanned ignitions in the Klamath Mountains – We will be working with Shasta-Trinity and other NFs units in the region
- Publications
- GIS based spatial model for evaluating burn severity – starting in the Klamath Mountains